भारतीय मानक
Indian Standard

IS 5162 : 2021

छेना — विशिष्टि

(दूसरा पुनरीक्षण)

Chhana — Specification

(Second Revision)

ICS 67.100.30

© BIS 2021

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली – 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.gov.in www.standardsbis.in

June 2021 **Price Group 3**

Dairy Products and Equipment Sectional Committee, FAD 19

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Dairy Products and Equipment Sectional Committee had been approved by the Food and Agriculture Division Council.

Chhana is the indigenous milk product prepared by acid coagulation of milk by heat treatment and subsequent drainage of whey. The coagulants mostly used are sour *Chhana* whey from a previous run, lactic acid, citric acid and juices of citrus fruits. Cow's milk is usually preferred over buffalo's milk for *Chhana* production, since cow's milk gives a more desirable body and texture. The colour of *Chhana* depends on the type of milk used; it is yellowish from cow's milk and whitish from buffalo's milk.

Chhana forms an important base for preparation of milk sweets such as *Rasogolla, Sandesh and Pantooah. Chhana* making is one of the important methods adopted for utilizing small amount of surplus milk. This standard is expected to help in exercising the necessary quality control in the manufacture of good *Chhana* under hygienic conditions.

This Indian Standard was originally published in 1969 and first revised in 1980 to include additional requirements for protein and ash with a view to ensure wholesomeness of the product and the requirement for moisture was made more stringent.

This second revision has been undertaken to harmonize the standard with FSSAI standards with respect to addition of food additives at permitted levels and inclusion of microbiological requirements as per the *Food Safety and Standards (Food Products Standards and Food Additives) Regulations*, 2011. Specifications for medium fat *Chhana* have also been included in this revision.

In the formulation of this standard, due consideration has been given to the *Food Safety and Standards Act*, 2006 and Regulations framed thereunder; the *Legal Metrology Act*, 2009 and Rules framed thereunder and the *Essential Commodities Act*, 1955. However, this standard is subject to restrictions imposed under these, wherever applicable.

The composition of the Committee responsible for formulation of the standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding-off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CHHANA — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for *Chhana* including *medium fat Chhana and low fat Chhana*.

2 REFERENCES

The following standards contain provision which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
2491 : 2013	Food hygiene — General principles — Code of practice (*third revision*)
2785 : 1979	Specification for natural cheese (hard variety), processed cheese, processed cheese spread and soft cheese (*first revision*)
5401 (Part 1) : 2012	Microbiology — General guidance for enumeration of coliforms: Part 1 Colony count technique (*second revision*)
5403 : 1999	Method for yeast and mould count of foodstuffs (*first revision*)
5887	Methods for detection of bacteria responsible for food poisoning
(Part 1) : 1976	Isolation, identification and enumeration of *Escherichia coli* (*first revision*)
(Part 2) : 1976	Isolation, identification and enumeration of *Staphylococcus aureus* and *faecal streptococci* (*first revision*)
(Part 3) : 1999	General guidance on methods for the detection of Salmonella (*second revision*)
11546 : 2012	Milk and milk products — Guidance on sampling (*second revision*)
11917 : 2018	Milk and milk products — Determination of nitrogen content — Kjeldahl principle and crude protein calculation (*first revision*)
14988 (Part 1) : 2020/ISO 11290-1 : 2017	Microbiology of food and feeding stuffs — Horizontal method for detection and enumeration of *Listeria monocytogenes*: Part 1 Detection method (*first revision*)
5402 (Part 1) : 2021/ ISO 4833-1 : 2013	Microbiology of the food chain — Horizontal method for the enumeration of microorganisms: Part 1 Colony count at 30 °C by the pour plate technique (*third revision*)
IS 10484 : 2021	*Paneer* — Specification (*first revision*)

3 TERMINOLOGY

For the purpose of this standard, the following definition shall apply.

3.1 ***Chhana*** — The solid product obtained by the acid coagulation of milk which has been subjected to minimum heat treatment equivalent to that of pasteurization followed by subsequent removal of whey. The coagulant used shall be sour *Chhana* whey, lactic acid or citric acid, malic acid and their calcium, sodium and potassium salts, vinegar and glucono delta lactone. *Chhana* shall not contain any ingredient foreign to milk.

4 TYPES

Based on the fat content in the product, *Chhana* shall be of the following types:

a) *Chhana,*
b) Medium fat *Chhana, and*
c) Low fat *Chhana.*

5 REQUIREMENTS

5.1 Only fresh, sweet, clean milk, free from colostrum, and in every way fit for human consumption shall be used. Milk solids suitably processed may also be used. The coagulants, such as lactic acid, citric acid, malic acid and their calcium, sodium and potassium salts, vinegar, glucono delta lactone shall be of food grade. Sour *Chhana* whey when used shall be heat-treated to render it microbiologically safe.

5.1.1 The milk may be standardized as required to enable the products to comply with the requirements for composition, body and texture. Before coagulation, milk shall be boiled or heated to sufficiently high temperature for such time that it will result in the complete destruction of pathogenic contaminants.

5.1.2 The product may contain permitted food additives within the limits as specified under the *Food Safety and Standards* (*Food Products Standards and Food Additives*) *Regulations*, 2011. No extraneous colouring matter shall be added to *Chhana*.

5.2 Colour and Appearance — *Chhana* shall have uniformly white to yellowish white colour. The product shall be free from any extraneous matter, surface discoloration or dryness and adulterants.

5.3 Odour and Flavour — The product shall have a pleasant, mildly acidic and slightly nutty flavour. It shall be free from objectionable flavours and odours.

5.4 Body, Texture and Consistency — The body of the product shall be uniformly soft and free from whey pockets. The texture of the product shall be smooth, slightly spongy and consistency shall be uniform and free from coarseness.

5.5 Hygienic Requirements

The product shall be processed, packed, stored and distributed under strict hygienic conditions as prescribed in IS 2491. It shall be properly packed, stored at low temperature, and distributed under refrigerated conditions.

5.6 The material shall also comply with the requirements specified in Table 1 and Table 2.

6 PACKING AND MARKING

6.1 Packing

All the materials used for wrapping or packaging of the product shall be food grade and of such a nature as to impart no off-flavour or odour, nor in any other way contaminate the product packed under normal conditions of manufacturer, storage and use.

6.2 Marking

6.2.1 The original pack or the prepared-consumer pack shall be marked as to give the following information:

a) Name and type of the product and brand name if any;
b) Name and address of the manufacturer;
c) Batch or code number;
d) Date of manufacturing or packing;
e) Net quantity;
f) Best before or use by date -------; and
g) Any other requirements under the *Food Safety and Standards (Packaging and Labelling) Regulations*, 2011 and the *Legal Metrology Act*, 2009 and Rules framed thereunder.

6.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

7 SAMPLING

Representative samples of the product shall be drawn and tested for conformity to this standard as prescribed in IS 11546.

Table 1 Requirements for *Chhana,* Medium Fat *Chhana* and Low Fat *Chhana*

(*Clause* 5.6)

Sl No.	**Characteristic**	**Requirement**			**Method of Test, Ref to**
		Chhana	Medium fat *Chhana*	*Low fat Chhana*	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Moisture, percent by mass, *Max*	65	65	70	Annex A of IS 10484
ii)	Milk fat, percent by mass (on dry basis)	50 (*Min*)	More than 20 and less than 50	20 (*Max*)	Appendix B of IS 2785
iii)	Protein, percent by mass (on dry basis), *Min*	25	25	30	IS 11917*
iv)	Ash, percent by mass (on dry basis), *Max*	5.0	5.0	5.0	A

* Protein content is 6.38 multiplied by the total Kjeldahl nitrogen determined.

Table 2 Microbiological Requirements for *Chhana, Medium Fat Chhana* and Low Fat *Chhana*

(*Clause* 5.6)

Sl No.	**Characteristic**	**Requirement**				**Method of Test, Ref to**
		Sampling Plan[1]		Limit (cfu)		
		n	c	m	M	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Aerobic plate count	5	3	1.5×10^5/g	3.5×10^5/g	IS 5402 (Part 1)
ii)	Coliform count	5	3	10/g	1×10^2/g	IS 5401 (Part 1)
iii)	*Staphylococcus aureus* (Coagulase positive)	5	3	10/g	1×10^2/g	IS 5887 (Part 2)
iv)	Yeast and mould count	5	3	50/g	1.5×10^2/g	IS 5403
v)	*Escherichia coli*	5	0	< 10/g	NA	IS 5887 (Part 1)
vi)	*Salmonella* sp.	5	0	Absent/25 g	NA	IS 5887 (Part 3)
vii)	*Listeria monocytogenes*	5	0	Absent/g	NA	IS 14988 (Part 1)

[1] For sampling plan see Annex B.

ANNEX A

[*Table* 1, *Item* (iv)]

DETERMINATION OF ASH

A-1 APPARATUS

A-1.1 Flat Bottom Dish, of stainless steel, porcelain, silica or platinum.

A-1.2 Muffle Furnace, maintained at 550 ± 20 °C.

A-1.3 Desiccator

A-2 PROCEDURE

Weigh accurately about 5 g of the material in the tared dish, previously dried in an air-oven. Heat the dish gently on a flame at first and then strongly in muffle furnace at 550 ± 20 °C till grey ash results. Cool the dish in a desiccator and weigh. Heat the dish again at 550 ± 20 °C for 30 minutes. Cool the dish in a desiccator and weigh. Repeat this process of heating for 30 minutes, cooling and weighing until the difference between two successive weighings is less than one milligram. Record the lowest mass.

A-3 CALCULATION

A-3.1 Total ash, percent by mass = $\frac{100\left(M_2 - M\right)}{M_1 - M}$

where

M_2 = mass in g, of the dish with the ash;

M = mass in g, of the empty dish; and

M_1 = mass in g, of the dish with the material taken for the test.

ANNEX B

[*Table* 2]

SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

B-1 SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

The terms n, c, m and M used in this standard have the following meaning:

n = Number of units comprising a sample.

c = Maximum allowable number of units having microbiological counts above m for 2-class sampling plan and between m and M for 3-class sampling plan.

m = Microbiological limit that separates unsatisfactory from satisfactory in a 2-class sampling plan or acceptable from satisfactory in a 3-class sampling plan.

M = Microbiological limit that separates unsatisfactory from satisfactory in a 3-class sampling plan.

B-2 INTERPRETATION OF RESULTS

2-Class Sampling Plan (where n, c and m are specified)	3-Class Sampling Plan (where n, c, m and M are specified)
1. Satisfactory, if all the values observed are ≤ m 2. Unsatisfactory, if one or more of the values observed are > m or more than c values are > m	1. Satisfactory, if all the values observed are ≤ m 2. Acceptable, if a maximum of c values are between m and M and the rest of the values are observed as ≤ m 3. Unsatisfactory, if one or more of the values observed are > M or more than c values are > m

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Dairy Products and Equipment Sectional committee, FAD 19

Organization	*Representative(s)*
National Dairy Research Institute, Karnal	Dr Manmohan Singh Chauhan (***Chairman***)
All India Food Processors Association, New Delhi	Dr K. L. Gaba Mr Vijay Gaur (*Alternate* I) Mr Santash Kumar (*Alternate* II)
Bihar State Cooperative Milk Producers' Federation Ltd, (COMPFED), Delhi	Mr Sushil Kumar Mr Rupesh Raj (*Alternate*)
CONCERT, Chennai	Mr K. Ramachandran Mr M. R. Krishnan (*Alternate*)
Confederation of Indian Food Trade & Industry, New Delhi	Ms Priyanka Gupta Dr Anirudha Chhonkar (*Alternate*)
Confederation of Indian Industry, New Delhi	Ms Neha Aggarwal Ms Arti Gupta (*Alternate*)
Centre for Analysis and Learning in Livestock and Food (CALF), Anand	Dr Rajesh Nair Dr Rajeev Chawla (*Alternate*)
Department of Animal Husbandry, Dairying & Fisheries, New Delhi	Mr Sagar Mehra Mr Rajesh Kumar Gupta (*Alternate*)
Directorate of Marketing and Inspection, Faridabad	Deputy Agricultural Marketing adviser Senior Marketing Officer-Standard (*Alternate*)
Export Inspection Council of India, New Delhi	Dr S. K. Saxena Mr Vikas Dahiya (*Alternate*)
Envirocare Labs Pvt Ltd, Thane	Mr Nilesh Amritkar Ms Sabeena K. (*Alternate* I) Ms Kavita Gokhale (*Alternate* II)
FICCI Research and Analysis Centre, New Delhi	Dr S. K. Manocha Dr Ajay Sharma (*Alternate*)
Food Safety and Standards Authority of India, New Delhi	Dr Monica Puniya Ms Tripti Tayal (*Alternate*)
Gujarat Cooperative Milk Marketing Federation Ltd, Anand	Mr Sameer Saxena Mr Sayan Banerjee (*Alternate*)
Haryana Dairy Development Coop Federation Ltd, Panchkula	Mr S. S. Kohli Mr Y. P. Singh (*Alternate*)
IDMC Ltd, Anand	Mr Devender Gupta Mr Prakash Maheshwari (*Alternate*)
Indian Dairy Association, New Delhi	Dr G. S. Rajorhia Dr Satish Kulkarni (*Alternate*)
Indian Stainless Steel Development Association, Gurugram	Mr Rohit Kumar Mr Rajat Aggarwal (*Alternate*)
Infant and Young Child Nutrition Council	Dr Nirupama Sharma Mr Kiran Desai (*Alternate*)
Jupitor Glass Works, New Delhi	Mr Karan Nangia Mr Amreek Singh Puri (*Alternate*)

Organization	*Representative(s)*
Mother Dairy Fruit and Vegetable Ltd, Delhi	Ms Nita Sen Mr Shailender Kumar (*Alternate*)
National Dairy Development Board, Anand	Dr R. S. Lahane Mr Suresh Pahadia (*Alternate*)
National Dairy Research Institute, Karnal	Dr Vivek Sharma Dr Rajesh Kumar Bajaj (*Alternate*)
National Institute of Food Technology Entrepreneurship & Management (NIFTEM), Sonipat	Dr P. K. Nema
National Institute of Nutrition, Hyderabad	Dr B. Santosh Kumar Dr Sylvia Fernandez Rao (*Alternate*)
Pradeshik Co-op Dairy Federation Ltd, Lucknow	Mrs Shabnam Chopra
Punjab State Coop Milk Producers' Federation Limited	Dr Brar
Rajasthan Co-op Dairy Federation (RCDF) Ltd, Jaipur	Mr J. D. Singh
Tamil Nadu Co-op Milk Producers' Federation Limited, Chennai	Mr S. R. Sankar Mr T. M. James Dinakaran (*Alternate*)
Tetra Pak India Pvt Ltd, Pune	Mr Shashikant Ramnath Suruse Mr Sameer Singh Suhail (*Alternate*)
Vimta Labs Limited, Hyderabad	Dr Jagadeesh Kodali Dr Muni Nagendra Prasad Poola (*Alternate*)
BIS Directorate General	Shrimati Suneeti Toteja, Scientist 'E' and Head (FAD) [Representing Director General (*Ex-officio*)]

Member Secretary

Dr Bhawana
Scientist 'D' (FAD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: FAD 19 (16200).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices: *Telephones*

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002
2323 7617
2323 3841

Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi
KOLKATA 700054
2337 8499, 2337 8561
2337 8626, 2337 9120

Northern : Plot No. 4-A, Sector 27-B, Madhya Marg
CHANDIGARH 160019
265 0206
265 0290

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113
2254 1216, 2254 1442
2254 2519, 2254 2315

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
MUMBAI 400093
2832 9295, 2832 7858
2832 7891, 2832 7892

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. DURGAPUR. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. JAMMU. JAMSHEDPUR. KOCHI. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAIPUR. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi